

CLAIMS

1. Device for lifting the front hood (20) of a motor vehicle in case of collision with a pedestrian, comprising a retaining member (10) for securing the front hood (20) on a vehicle body (14) and a pyrotechnic explosive unit (16) for releasing the retaining member (10), characterized by lift means (18) for lifting the front hood (20) into a collision position actuatable by the energy released by the explosive unit (16) upon releasing the retaining member (10).
2. Device according to Claim 1, thereby characterized, that the retaining member (10) forms a connecting element for rigid connection of the hood (20) with the vehicle body (14) at least in the lift direction.
3. Device according to Claim 1 or 2, thereby characterized, that the retaining member (10) includes two retaining member parts (28, 30) separable along an intended break line or site by the explosive unit (16), and that the retaining member parts (28, 30) are movable apart from each other as lift means (18) by the explosive unit (16).
4. Device according to one of Claims 1 through 3, thereby characterized, that the explosive unit (16) is seated in a hollow space in the retaining member (10).
5. Device according to one of Claims 1 through 4, thereby characterized, that the lift means (18) includes a transmission element for transmission of the impulse released by the propulsive gas of the explosive unit (16).
6. Device according to one of Claims 1 through 5, thereby characterized, that the lift means (18) includes a cylinder element (32) enveloping the retaining member (10) and the therein located explosive unit (16), the cylinder element (32) in particular formed by a jacket or casing.
7. Device according to one of Claims 1 through 6, thereby characterized, that the lift means (18) includes a lift device expandable by means of the propulsion gas of the

- explosive unit (16), preferably in the form of a fabric bag, folded bellows or telescopic pipe expansion unit (44; 58).
8. Device according to one of Claims 1 through 7, thereby characterized, that the front hood (20) is linked to the vehicle body (14) via a multi-articulated fold hinge (20), wherein a first linkage (68) is provided for the normal operation and a second linkage (70) is provided for the case of collision and the hinge elements (74, 76) connected via the second linkage (70) are secured to each other by the retaining member (10) and expanded or unfolded relative to each other by the explosive unit (16).
 9. Device according to one of Claims 1 through 8, thereby characterized, that the explosive unit (16) is provided in a preferably swan-neck shaped hinge element connecting the hood hinge (20) with the vehicle body (14), and that the hinge element forming a retaining member (10) is separable by the explosive unit (16).
 10. Device according to one of Claims 1 through 9, thereby characterized, that the lift means (18) includes a lift piston (62) guided in a lift cylinder (60), wherein the lift piston (62) is secured in a locking position by the retaining member (10) and the retaining member (10) is releasable by the propulsive gas of the explosive unit (60) acting upon the lift cylinder (16).
 11. Device according to Claim 10, thereby characterized, that the retaining member (10), preferably in the form of a guide pin, in the locking position produces a form fit between lift piston (62) and lift cylinder (62), and by means of the propulsive gas is movable into a release position releasing the form fit.
 12. Device according to one of Claims 1 through 11, thereby characterized, that the explosive unit (16) while effective as pyrotechnic drive means produces propulsive or drive gas.

13. Device according to one of Claims 1 through 12, characterized by a lift limiter (34) connected to the hood and to the body for limiting and/or guiding the lift movement of the front hood (20).
14. Device according to Claim 13, thereby characterized, that the lift limiter (34) is a movable fabric part or a tearable or bendable sheet metal or a deformable plastic part.
15. Device according to one of Claims 1 through 14, thereby characterized, that for securing the front hood (20) against a displacement transverse to the lift direction, at least one guide element (40) engaging in a guide opening (42) is provided.
16. Motor vehicle with a device for lifting the front hood (20) according to one of the preceding claims.
17. Process for lifting the front hood (20) of the motor vehicle during a collision with a pedestrian, in which the front hood (20) is secured to the vehicle body (14) in operating condition via a retaining member (10) and in the case of collision the connection by the retaining member (10) is released by means of the pyrotechnic explosive unit (16), thereby characterized, that the front hood (20) is lifted into a collision position by means of the energy of the explosive unit (16) released upon releasing of the retaining member (10).